

About our project

The main objective of PARITY Project is to develop tools to take advantage of the ability of electricity users to modify the way they consume or generate energy to improve the operation of the electricity system.

In the electricity system of the future there will be lots of distributed generation sources (solar photovoltaic panels or windmills) and storage systems (batteries) spread along the grid. For a proper grid operation generation, storage and energy consumption must be coordinated. To reach this, generation, storage and energy consumption must be monitored and controlled by smart systems. The tools to be developed in PARITY will allow the monitoring of the grid (to find problems) and the monitoring of generators and consumers (to find solutions from the demand side).

The PARITY solutions will be tested in buildings belonging to four pilot sites around the European Union (Spain, Greece, Switzerland and Sweden) to validate the effectiveness across different climatic, cultural and techno-regulatory conditions.

Information we need

To develop the PARITY project tools and properly adapt them to all the electric system actors (from system operators and regulators to small consumers) different surveys and interviews have to be carried out.

This interview will be used to gather information among distribution system operators (DSOs) to know how the tools to monitor the grid, to analyse the state and to improve the operation of its system should be. This survey also will allow to characterize Project pilot sites.

Estimated time to complete the questionnaire: 15 minutes

Personal data protection:

According to the in force regulation, you are informed that due to the monitoring and control obligations to which Fundación CIRCE – Centro de Investigación de Recursos y Consumos Energéticos (hereinafter, “CIRCE” or the “Foundation”) is subject in the Project H2020 PARITY Project: Prosumer AwaRe, Transactive Markets for Valorization of Distributed flexibility enabled by Smart Energy Contracts (Nº864319) (hereinafter, the “Project”), in their condition of collaborator of the mentioned Project together with the rest of consortium partners, are obliged to keep records of the activities carried out, including meetings, training and/or dissemination of Project activities, interviews, among others, in the frame of the Project, aiming at performing the actions required by the control bodies and any other competent authorities of the Project.

With this consent, you are informed that your personal data can be sent to control bodies and any other competent authorities of the Project and to the rest of the consortium partners in order to comply with the control requirements under CIRCE’s obligations in the frame of the Project, and will be kept until the end of the Project and for the limited periods of the responsibilities that may result enforceable.

Additionally, CIRCE will process the personal data you provide us in this form to, in the framework of the Project, send you different surveys for completion, with the objectives of identifying the specifications of the tools developed in the framework of the reference project, based on the preferences of potential users, under their consent and / or the relationship maintained with Fundación CIRCE. In this sense, if you expressly authorize it by checking the

corresponding boxes at the bottom of this form, your data may be processed by Fundación CIRCE for the purposes indicated above. You have the right, among others, to oppose the processing of your data, revoke your consent at any time, access, limit, rectify and / or delete your data by contacting the Data Protection Officer of CIRCE via email at protecciondatos@fcirce.es. You are also entitled to lodge a complaint with the Spanish Data Protection Agency. You will find more detailed information about your rights and other privacy conditions in our Privacy Policy: <http://www.fcirce.es/politica-de-privacidad-y-cookies> and in the following link: http://www.fcirce.es/pub/CIRCE_clausula_formacion.pdf

- I have been informed about the treatment of my data by CIRCE and I authorize their use.
- I authorize the use of the data resulting from the completion of the surveys that, where appropriate, are sent to me by Fundación CIRCE.
- I authorize the making of calls or video calls and their recording within the legitimate interest of Fundación CIRCE under the framework of the reference

Want to know more? Please visit <https://www.parity-h2020.eu/> for more information about the PARITY Project.

This document lists the topics to be discussed in the interviews with internal and external stakeholders (bold lines) and the objective information to be gathered about every topic (normal lines). This document will be sent to the interviewed expert some days before the interview so he/she can prepare the answers to the questions.

Please provide this information on written before the interview takes place

- **Characterization and company profile**
 - Get data about the company: size, main tasks, number and type of customers/buildings/facilities (general), national and international expansion, etc...
 - Expected future evolution.
 - Experience in energy and smart grid sector: knowledge about the sector, experience, current project or business, implicit/explicit demand response, demand aggregator.
- **Building type (used in the PARITY Project)**
 - Size: floors, surface (total, per floor).
 - Use: offices, residential, industrial, others, type of users, number of users, ...
 - Own or rented.
 - Included in the project and others.
 - ...
- **Type and number of flexibility providers**
 - Amount and characterization (number of users, contracted power, average energy consumption, business uses, location, local generation or storage, etc...) of possible flexibility sources.
- **DER availability**
 - Generation
 - Technology
 - Power
 - Controllability
 - Others
 - Storage
 - Technology
 - Power and capacity
 - Controllability
 - Others
 - Manageable demands (lighting, appliances, office equipment)
 - Technology
 - Power and capacity
 - Controllability
 - Others
 - HVAC
 - Technology
 - Power and capacity
 - Controllability
 - Others
 - Domestic water heating
 - Technology

- Power and capacity
 - Controllability
 - Others
 - Sensoring and monitoring
 - Technology
 - Power and capacity
 - Controllability
 - Others
 - Electric or hybrid vehicles
 - Technology
 - Power and capacity
 - Controllability
 - Others
 - Others
 - Technology
 - Power and capacity
 - Controllability
 - Others
- **Electricity contract**
 - Contracted power, voltage level (own transformer?), periods, etc...
 - Penalties for reactive power or others.
 - Problems with harmonics.
- **Annual consumption**
 - Electric energy (total, monthly, daily, hourly)
 - Thermal energy (gas, diesel, biomass, others)
 - Bills (annual economic consumption)
- **Comfort settings levels**
 - Temperature ranges available
 - Opening schedule (holidays, weekends...)
 - Season differences
- **Current IT system architecture**
 - Description of the IT architecture in your company to monitor and/or control your customers.
 - Data Security description in your systems and ideal data security for aggregation tasks.
 - Information sharing and interface: App, webserver, e-mail, periodic reporting, or real data
 - User requirements concerning personal data protection and usage
 - Type of contract: digital, physical, or both
- **For Parity project partners only:**

What of the following DR management expected functionalities of the Parity tool set are a “must”, a “want”, or are not needed at all from your point of view?

 - UC1 Building-level P2H/BaaB flexibility estimation & automated provision to aggregator for LFM participation (Must, Want, No need, Don't know)
 - UC2 Aggregated P2H flexibility estimation and provisioning for market participation pre-qualification (Must, Want, No need, Don't know)
 - UC3 Aggregated V2G flexibility estimation and provisioning for market participation pre-qualification. (Must, Want, No need, Don't know)

- UC4 Human-centric and contract-safeguarding participation in LFM, based on context-aware flexibility profiles. (Must, Want, No need, Don't know)
- UC5 Forecasting, scheduling and dispatch of DER flexibility for coordinated management of the LFM grid. (Must, Want, No need, Don't know)
- UC6 Flexibility exchange triggered by smart contracts for automated grid balancing. (Must, Want, No need, Don't know)
- UC7 Smart grid management using enhanced PQ services for grid instability limitation. (Must, Want, No need, Don't know)
- UC8 Ancillary services provision by STATCOM to TSO for overlay network stability. (Must, Want, No need, Don't know)
- UC9 Congestion management by DSO through operation of LFM to increase DER penetration. (Must, Want, No need, Don't know)
- UC10 Operation of local flexibility market in a grid constrained area. (Must, Want, No need, Don't know)
- UC11 Provision of ancillary services to overlay ancillary service market operated by TSO. (Must, Want, No need, Don't know)
- UC12 Participation of LFM-enabled flexibility to national wholesale energy market. (Must, Want, No need, Don't know)
- UC13 Red light (emergency) grid management using automated control of distributed DER (through smart contracts). (Must, Want, No need, Don't know)
- UC14 Energy/flexibility credit exchange in the LFM jurisdiction (Must, Want, No need, Don't know)
- UC15 Flexibility enhancement through synergies with neighbor distribution networks and/or LFM. (Must, Want, No need, Don't know)
- **For NON-Parity project partners only:**
 - **What of the following demand response management tools functionalities do you think are a “must”, a “want”, or are not needed at all from your point of view?**
 - Demand and generation forecasting (Must, Want, No need, Don't know)
 - Flexibility provision (Must, Want, No need, Don't know)
 - Aggregation of flexibility (Must, Want, No need, Don't know)
 - DER registry with available DER data (power, number, schedule, type) (Must, Want, No need, Don't know)
 - Contractual data repository (Marketplace) (Must, Want, No need, Don't know)
 - Local and global demand manager (Automatic interaction with the DER systems). (Must, Want, No need, Don't know)
 - Interface and user portal (Must, Want, No need, Don't know)
 - Provide to the final customers complete data about their facilities (Must, Want, No need, Don't know)
 - Others: _____

Please provide these answers one or two days before the interview. Thank you.

These questions will be discussed during the interview, following the answers provided to the characterization questions above.

- **Current availability of data from their facilities**
 - Direct monitoring of your users: granularity, values monitored, direct access to meters
 - Smart metering?
 - Availability of historical data? How long it is stored for?
 - Availability of data from individual DERs?
 - Monitoring of other external data? (weather, electricity market prices...)
 - Do you have information about users' electrical devices and equipment?
 - Reporting frequency
- **Interest of the company in Local Flexibility Markets (LFM) Participation involvement**
 - General perception of LFMs
 - Previous experience and knowledge on electricity markets
 - Previous experience and knowledge on flexibility or demand management markets
- **Interest of the company in Current demand management**
 - Interest about energy efficiency
 - Interest about demand management/flexibility
 - Interest about RES self-consumption optimization
 - Interest about energy tariff (energy and contracted power) contract optimization
 - Other interests about demand management
- **Willingness for flexibility participation**
 - LFM participation willingness in the future, conditions to participate (remuneration, tasks to be carried out, etc...)
 - automated, semiautomated participation
 - direct participation or through aggregators.
 - type of aggregation contract, aggregator functions.
 - What devices or DERs would you make available for flexibility markets
- **Barriers and incentives identified for demand response management.**
 - **Incentives.** State those aspects that can incentive the development of Demand Management schemas and flexibility markets. Examples:
 - Fair remuneration
 - Contribute to your own grid balancing mechanisms.
 - Offer an additional value-added service to your clients, as they could become flexibility providers.
 - Participate in newly open demand-response marketplaces
 - Improve your control and management over your customers' energy consumption and DER operation.
 - Contribute to the sustainability of the electricity system by reducing environmental impacts.
 - Other incentives. Please state: _____
 - **Barriers.** State those aspects that can limit/slow the development of Demand Management schemas and flexibility markets. Examples:
 - Initial investment on IT systems and learning curve
 - Possible economic penalties in case of failure to deliver the committed demand flexibility.

- Financial remuneration low
 - Possible new technology failure or malfunctioning.
 - Lack of transparency and regulation about market rules.
 - Lack of previous aggregation experience in a new business market.
 - Difficulty of managing the integration between all the components.
 - Possible conflicts with demand flexibility services already existing in some of European countries
 - Possible misuse of customers' personal data.
 - Lack or not settled legislation regarding flexibility markets in most EU countries
 - Non established financial regulation regarding Blockchain
 - Lack of available funding to implement the changes needed for the adoption of a flexibility market.
 - Other barriers. Please state: _____
- **Others. Please specify**
 - Other tool set requirements specific for your business model, or type of customers.
 - Other particular questions based on the answers given to the characterization questions.